

The Charles H. Terhune, Jr. Collection, 1975-1983

1.2 cubic feet

JPL 222

Biography

Charles H. Terhune, Jr., was born on May 7, 1916 in Dayton, Ohio. He earned a Bachelor of Science degree in 1938 from Purdue University, and an Aeronautical Engineering degree from the California Institute of Technology (Caltech) in 1940.

Terhune joined the Army Air Corps in 1938 and received his pilot wings in May 1939 at Kelly Field, TX. As an Army Air Corps pilot in 1939, he tested bullet-proof fuel tanks for aircraft at Wright Field, OH, and was associated with development of the first jet aircraft for the Army Air Force in the early 1940s, serving at Wright Field. During the latter stages of World War II, Terhune participated in combat missions from the Philippines and Okinawa as Executive Officer of the 58th Fighter Group, Pacific Theater, and after the War he served as Commander, 49th Fighter Group, Japan. From 1947-52, Terhune served in various positions involving guided missile development, stationed at the U.S. Air Force Headquarters, then in the Office of Secretary of Defense, Washington, D.C.

From 1952-54, Terhune was assigned as Director of Development, Air Force Special Weapons Center, Kirtland AFB, NM. During this time he was responsible for Air Force development associated with installation of nuclear weapons in aircraft and guided missiles. From 1954-60, he was stationed at various locations in the Los Angeles, CA area, and was instrumental in the implementation of intermediate range and intercontinental ballistic missiles to operational status. He was promoted to brigadier general in 1959. From 1960-64, he served in various managerial positions at Hanscom Field, MA, attaining the position of Commander, Electronic Systems Division. From July 1964 to May 1967, he served as Commander of the Aeronautical Systems Division at Wright-Patterson AFB, OH, and beginning in May 1967, he served as Vice Commander, AFSC, Andrews AFB, MD.

General Terhune retired as a Lieutenant General in 1969. From 1969 to 1971, he was manager of administration at National Cash Register's Data Processing Division in San Diego. In 1971, he was named JPL Deputy Director, assuming his duties on July 19, 1971.

General Terhune served as Acting Lab Director for four months after the resignation of Lab Director Bruce Murray, from July 1 to October 14, 1982, when General Lew Allen assumed the position of Director. Terhune retired as Deputy Director of JPL in December 1983.

Terhune earned several decorations and service awards in the U.S. Air Force, including the Distinguished Service Medal, Legion of Merit, and Air Medal with 1 oak leaf cluster. He was awarded NASA's Distinguished Service Medal in 1982.

Provenance

Accession 1994-3: Internal evidence implies that part of the original accession came from the Public Affairs Office, and part came from the Office of the Director. The collection was transferred from the Laboratory Records Center to the JPL Archives in early 1994.

Accession 2001-31: This accession was transferred to the Laboratory Records Center by Lorraine Brakebill on February 9, 1987. It was transferred from the LRC to the JPL Archives on July 27, 2001.

Collection Arrangement and Description

The collection is composed of materials originating from Charles H. Terhune, Jr., JPL Deputy Director from 1971-1983. The materials in the collection are from 1975-1983, with bulk dates of 1980-1983. The collection is divided into two series, each organized chronologically: memoranda and outgoing correspondence.

Memoranda (Box 1; Folders 1-8). These memoranda are printed on buff-colored paper, with a letterhead indicating it came from the Office of the Director. In most cases the memoranda was addressed to the Senior Staff or to Distribution. The memoranda were collected by Richard B. Phillips and Frank J.

Colella, who served as the Manager of the Public Affairs Division (Section 180) at different times during the 1970s.

The memoranda represented in the collection ends in 1982. Other Deputy Director memoranda were integrated into the correspondence of the Office of the Director as a whole, and the researcher should probably consult the appropriate collections, such as JPL 200 (Office of the Director Interoffice Memoranda Collection), for a complete view of the office.

Most of the memoranda concern mundane day-to-day matters. A memo dated September 19, 1977 sent to all personnel addressed the issue of the standard of excellence at JPL. Earlier in the year there were accidents at the Lab that damaged two items of flight hardware, the TIROS N Microwave Sound Unit and the NIMBUS-G Scanning Microwave Multi-channel Radiometer. These incidents prevented JPL from meeting important delivery milestones to the Goddard Space Flight Center, and resulted in increased costs to these tasks. Terhune was concerned that this occurrence indicated a trend away from the standard of excellence that JPL had maintained for many years, and would damage JPL's reputation.

Interoffice Memorandum 16-78, dated October 4, 1978, and addressed to the JPL Senior Staff, was a report on the post-flight review of Goddard Space Flight Center's operational support of Seasat. The report was thought to be applicable for lessons to be learned for JPL support of flight projects. The review was conducted to investigate the reasons for the intensive effort required immediately before launch to achieve an acceptable state of readiness, and to identify the cause for missed passes by the Deep Space Network stations early in the flight phase of the mission. It was decided that management weaknesses were the principle cause of the apparent near-chaos of the pre-launch phase. The inability of the Network stations to command the spacecraft during the early passes was due to a procedural error contained in the Network Operational Support Plan issued to the stations prior to the launch.

Interoffice Memorandum 2-80, dated January 23, 1980, made modifications to the Director's Report and Discussion (DRD) meetings. The DRD meetings were a series of twice monthly reports to the Director and Deputy Director on the status of major flight projects; other selected projects, tasks, and programs; and institutional matters. Included as attachments to the memo are notes on the purpose and conduct of Director's Report and Discussion, and preliminary agendas for the meetings covering the whole calendar year of 1980.

The increased defense work that JPL was participating in is evident in the announcement of classified Senior Staff meetings with people involved in Defense issues, such as Eugene Fubini, retired Air Force General Alton D. Slay, and Army General John Guthrie, all in the first four months of 1982. Various memoranda issued by Terhune notified the Senior Staff of the meetings.

In early April 1982, Bruce Murray abruptly announced his resignation as JPL Director, effective June 30, 1982. Interoffice Memorandum 12-82, dated April 16, 1982, sent to members of the Senior Staff announced the Search Committee for a new JPL Director, with Caltech Trustee John Braun as Chairman. Representing JPL on the Committee were Fred Felberg, Gene Giberson and Nick Nichols.

Terhune served as Acting Director from July 1 to October 14, 1982, until the installment of Lew Allen as Director. All memoranda and correspondence from Terhune were signed as "Acting Director." Lew Allen was announced as the new director in an Office of the Director memorandum dated July 22, 1982, originally effective October 1, 1982, later postponed to October 14, 1982.

Chronological Correspondence File (Boxes 1-3; Folders 9-30). The chronological correspondence file consists of outgoing correspondence sent from Terhune to others. The date span is from January 1980 through December 1983. The early months of the files were somewhat disorganized, with monthly indices beginning in May 1981, continuing through August 1981, then discontinued until July 1982. The last year and a half of the files (July 1982-December 1983) are more organized and cohesive than the first part of the files.

Much of the chronological files represent the routine, day-to-day running of the Lab, as do the memoranda. There are congratulatory letters that the Deputy Director routinely sent to JPL personnel who obtained a patent on an aspect of their work. Letters of condolence to the families of recently deceased JPL personnel are also in the file, usually with a one-page report of employee death or serious injury. This form gave the deceased employees name, family and work context, and the date, time and cause of death, along

with funeral arrangements, if known. Other documents of a routine nature are signature sheets for reports that were required of Terhune.

There was routine correspondence between Terhune and various NASA personnel, most notably NASA Associate Administrator for Space Science and Applications Burt I. Edelson, NASA Associate Administrator for Space Tracking and Data Systems Robert E. Smylie and Contracting Officer of the NASA Resident Office at JPL Richard T. Hanson. The Hanson correspondence was primarily composed of Monthly Workforce Reports, represented in the collection by the cover sheets accompanying the reports. NASA Personnel Exchanges Officer Elma D. Green is represented in the collection beginning in August 1982 with letters requesting the hiring of foreign nationals.

One example indicative of the shift towards Defense work was in a memorandum to Bruce Murray, dated April 28, 1981. The memo regarded the visit to the Lab by NASA Deputy Administrator-Designate Hans Mark. Mark had been named Deputy Administrator in March 1981, but was unconfirmed until July 1981. Terhune reported that Mark told Caltech President Marvin Goldberger that JPL should participate in DOD work up to 50% of its capacity. Mark was also concerned with the approval of the Centaur launch vehicle, and feared a showdown between the U.S. Air Force and NASA over the issue of Centaur development. Mark also believed that the existing plans for Galileo had no chance of approval by OMB, even though it was reported that OMB had been briefed and had not made any "dire pronouncements."

In a July 28, 1982 letter to Burt Edelson, Terhune asked about the possibility of assembling a spare Galileo spacecraft using the existing spare hardware with new or refurbished hardware as required. Terhune reported that Galileo Project Manager John Casani believed that a second Galileo spacecraft would be an effective way to protect the investment that Galileo represented. A single spacecraft concept was chosen in 1977 when the planned launch was in 1982, in order to hold down development cost. A second spacecraft would provide the test and operations team appropriate work during the additional year before launch, and it would allow for a complete set of spare components. Terhune noted that both the Voyager and Viking spacecraft were changed out using spare components, which allowed them to still make the launch dates. Additionally, the built-in redundancy of dual spacecraft in case of a catastrophic failure was noted.

Terhune also noted that a spare spacecraft could be used in a Saturn Orbiter/Probe mission, with a launch date of January 1987. The spare could be sent to Saturn if the first mission had trouble free operation for the first eight months.

In an August 2, 1982 letter to Under Secretary of the Army James R. Ambrose, Terhune thanked him for coming to JPL to discuss the All Source Analysis System (ASAS). In a second letter, dated August 16, 1982, Terhune expressed to Ambrose that JPL was prepared to assume the implementation role in the ASAS program.

In an August 19, 1982 letter to Edelson and Robert E. Smylie, Terhune asked for approval for planetary radar astronomy support for future missions such as the Venus Radar Mapper, and future missions involving Mars and asteroids.

An August 20, 1982 letter to Edelson revealed evidence of competition amongst various NASA Centers and JPL. Terhune addressed the assumption by various members of the scientific community that JPL was a costly place to do business. This was regarding a consideration to transfer operations responsibility for Pioneer from Ames to JPL. There were indications that people at NASA Headquarters also believed that JPL was costly. Terhune flatly denied the assertion, and used as evidence charts showing that JPL planetary missions had cost less than the more ambitious Earth orbiting missions, and there was a dramatic drop in cost per bit of information returned over the period from the first planetary missions through Voyager.

The Army Analysis Program (AAP), later called the Arroyo Center, was first mentioned in the files in September 1982 with the signature sheet of a report titled "U.S. Army Analysis Program." Fred Felberg signed the report for the absent Acting Director Terhune. The AAP was envisioned as a high-quality, interdisciplinary, future-oriented research and analysis organization, patterned after the RAND Corporation. A November 8, 1982 interoffice memorandum, to Jack N. James and H. M. Schurmeier, was entitled "Guidelines for Development of the Army Analysis Program." The memo announced that the AAP would be developed as part of JPL with the permanent Director reporting directly to the Director of JPL. There was

to be no planned formal connection between the AAP and Caltech. The studies to be carried out by the AAP were to cover the full range of problems facing the Army, both technical and non-technical, with emphasis on the long-range outlook. The remainder of the memoranda gave further information on the implementation and duties of the Army Analysis Program, which was renamed the Arroyo Center in mid 1983. A November 2, 1983 interoffice memorandum announced the transfer of the Arroyo Center from the JPL Office of Defense Programs to the Office of the Director, effective November 7, and named Richard A. Montgomery as Director of the Arroyo Center. More elaborate information on the Arroyo Center may be found in several other collections, most notably JPL 110 (Arroyo Center Report Collection) and JPL 173 (Harris M. Schurmeier Collection).

Another military project, the All Source Analysis System (ASAS), later called ASAS/ENSCE, also was active at JPL. One of the first mentions of the ASAS Project of any substance in the collection is in a November 18, 1982 interoffice memorandum to Distribution. Terhune described the relationship with the Army in the project, along with the appointment of a Special Task Force, with JPL representatives. Terhune assigned Jack James as Acting ASAS Project Manager. In a November 19, 1982 letter to NASA Resident Office-JPL Manager Fred Bowen, Terhune expressed the need for an increase in building space available in order to accommodate the facility needs of the ASAS project and other DOD work.

By January 1983, the ASAS Project was now referred to as the All Source Analysis System/Enemy Situation Correlation Element (ASAS/ENSCE). A January 18, 1983 letter to Lt. General W. R. Richardson noted this change in project name. Terhune assured him that JPL was up to the task for the project. Included as an attachment are notes taken by Terhune during a January 11, 1983 meeting with General Richardson. Further information about ASAS/ENSCE may be found in JPL 199 (All Source Analysis System/Enemy Situation Correlation Element (ASAS/ENSCE) Test Documents and Interface Module (AIM) Collection).

JPL Discreet materials

22 folders contain documents that are stamped or marked "JPL Discreet" or "SEB Discreet." The original positions of Discreet material in the collection have been marked with separation sheets. The material has been moved to a box at the end of the collection.

The majority of Discreet materials are concerned with the findings of various Noncompetitive Source Boards, or Source Evaluation Board materials, both regarding components for various projects.

Conservation/Preservation

Standard preparations of documents for long term storage were completed.

Separation Statement

Accession 1994-3: The collection was 0.3 cubic feet of the original 4 cubic foot accession. The remainder of the accession was made into the JPL Public Affairs Office Collection (JPL 215), the Bruce C. Murray Collection (JPL 216), and the Executive Council Collection (JPL 221).

Finding Aids

No other finding aids exist for the collection.

FILE FOLDER LIST

Box 1 of 4 - Memoranda

Fld. 1	Terhune Memoranda, 1975.
Fld. 2	1976.
Fld. 3	1977.
Fld. 4	1978.
Fld. 5	1979.
Fld. 6	1980.

Fld. 7 1981.
Fld. 8 1982.

Chronological Files

Fld. 9 Terhune Chron. Files, January-March 1980.
Fld. 10 April-June 1980.
Fld. 11 July-September 1980.
Fld. 12 October-December 1980.

Box 2 of 4

Fld. 13 Terhune Chron. Files, January-February 1981.
Fld. 14 March 1981.
Fld. 15 April 1981.
Fld. 16 May-June 1981.
Fld. 17 July-September 1981.
Fld. 18 October-December 1981.
Fld. 19 January-March 1982.
Fld. 20 April-June 1982.
Fld. 21 July 1982.
Fld. 22 August 1982.

Box 3 of 4

Fld. 23 Terhune Chron. Files, September 1982.
Fld. 24 October-November 1982.
Fld. 25 December 1982.
Fld. 26 January-March 1983.
Fld. 27 April-June 1983.
Fld. 28 July-August 1983.
Fld. 29 September-October 1983.
Fld. 30 November-December 1983.

Box 4 of 4 – JPL Discreet

JPL Discreet materials; 22 folders.

CATALOG DESCRIPTION

Charles H. Terhune, Jr. Collection, 1975-1983

1.2 cubic ft. (52 folders)

Charles H. Terhune, Jr. served as JPL Director from 1971-83, after retiring from the U.S. Air Force with the rank of Lieutenant General. The collection is composed of materials originating from Terhune. The materials in the collection are from 1975-1983, with bulk dates of 1980-1983. The collection is divided into two series, each organized chronologically: memoranda and outgoing correspondence.

The collection contains JPL Discreet materials.

Finding aid available in the repository.

Tracings

Jet Propulsion Laboratory – History.

National Aeronautics and Space Administration

Seasat

Galileo Project

All Source Analysis System
All Source Analysis System/Enemy Situation Correlation Element
Army Analysis Program
Arroyo Center
Terhune, Charles H., 1916-
Murray, Bruce C., 1931-
Phillips, Richard B., 1918-1983.
Colella, Frank J., 1921-
James, Jack N., 1920-2001.
Edelson, Burton I., 1926-
Smylie, Robert E.
Mark, Hans, 1929-
Hanson, Richard T.

Part of Accessions 1994-3, 2001-31.